therefore, to this peculiarity of the evolution of gas during solidification, it is possible to produce ingots of ingot-iron which show equal behaviour on rolling from top to bottom, and yield so little scrap that one might imagine they were pre-rolled blooms. Of course, this can only be attained if the deoxidation by manganese is practically complete, and easting takes place at a proper temperature. If the metal be cast at a too low temperature, it is able to give rise to blowholes situated too near the surface, forming so-called "brim holes."
With such bubbles, the thin outer surface of the metal often is burnt through in the re-heating furnace, and the lire gases reach their interiors and oxidise their surfaces. Such metal on rolling acquires scrafs and slag holes involving its rejection.
Soft ingot iron, manufactured in the open-hearth furnace from a manganiferous charge free from red shortness and tapped out without manganese additions, casts like a metal to which silicon or aluminium has been added.
It flows quietly like oil, and shows neither during casting nor setting the play of escaping gases, which detach particles of metal from the upper surface of the ingot, and allow them to burn with lively scintillations.
The ingots also become sound, but are deeply piped, or have bad heads.
Therefore, one willingly adds manganese to such metal, and always perceives from its action that the metal contains oxygen, and to such large amount that the carbon of the manganese is attacked by it. Then again on casting, the play in the mould takes place and renders manifest the formation of CO. One again obtains faultless ingots with good interiors and heads, with the characterise of unharmful small blowholes.